

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPELLANT'S BRIEF

Appellant: Lev Korenevsky  
Application #: 10/037,548  
Examiner: Shay L Balsis  
Art Unit: 1744

REAL PARTY OF INTEREST

Lev Korenevsky

RELATED APPEALS AND INTERFERENCES

N/A

STATUS OF CLAIMS

Claims rejected: 1-4 and 6-9  
Claims withdrawn from consideration: 11-17  
Claims cancelled: 5 and 10

STATUS OF AMENDMENTS

The supplemental amendment to Claim 1 was entered after the final rejection for purposes of appeal.

SUMMARY OF CLAIMED SUBJECT MATTER

Independent Claim 1 and Dependent Claims 2 – 4 and 6 - 9

The present invention is described by Claim 1. Its advantages are further facilitated by dependent Claims 2 – 4 and 6 – 9. It presents a paint roller frame that firmly retains a removable paint roller sleeve in the working position and does not let any paint to leak inside the sleeve core and the roller cage. Such leak resistance is achieved through several innovations.

The important component of the new design is a detachable outer portion of the roller cage assembly that combines the cylinder surface to support the outer end of the roller sleeve and the outer retaining face. One of the principal innovations of the invention is that this outer portion is attached to the bearing portion of the roller cage assembly via a mating connection imposing a desirable squeeze of the roller cage (Claim 1).

Two resilient washers adjacent to both inner and outer sleeve core edges are one more element that further improves the leak-proof characteristics of the roller cage assembly

(Claim 2). They absorb the core end unevenness eliminating any route for paint leakage from the outer end and also help to impose a steady urge on the core.

The third key component of the invention is an external washer for the bearing assembly which blocks another possible route of paint leakage inside the sleeve core: from the inner end in-between the bearing assembly and the shaft (Claim 3).

Usage of the removable outer portion creates preconditions for a design that allows the same roller frame be used with roller sleeves of at least two standard lengths and intermediate lengths (Claim 4).

The invention provides a paint roller frame design in which the roller cage is easily disassembled for maintenance and replacement of worn parts, assembled again, and mounted on the shaft with the help of conventional tools (Claim 6).

The cylinder surface of the outer annular face of the detachable outer portion creates preconditions for a new design of a clip-on end wig (Claim 7) to paint wall corners when both surfaces of a corner are to be painted with the same paint (no brush needed).

A roller frame hook located on the shaft close to the roller cage is used when the roller frame is resting on a grid that is placed in a paint bucket. It allows keeping the roller frame with a conventional U-shaped shaft in the highest possible position above the paint surface (Claim 8). As a result, the painter can add more paint to the bucket (and less often!) without the paint roller sleeve soaking the paint.

A plastic sheathing for the portion of the U-shaped shaft adjoining the roller cage assembly eliminates creation of dark marks when this shaft portion occasionally touches the wall (Claim 9).

#### GROUND OF REJECTION TO BE REVIEWED ON APPEAL

Claims 1 – 3 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Thackara (USPN 2766473).

Claims 1 – 4, 6 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Newman (USPN 3745624).

Claims 1 – 4 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Dezen (USPN 4467509).

## ARGUMENT

### Introduction

The appellant will prove that:

- the invention presented by Claim 1 is not anticipated by Thackara (USPN 2766473), Newman (USPN 3745624), and Dezen (USPN 4467509)
- end units in these inventions, unlike end units in Claim 1, do not form mating connections, and therefore, the language used to express the invention in Claim 1 adequately represents the basic idea of the invention for any person skilled in the art.

This will also prove that the dependent claims 2 – 4 and 6 – 9 are not anticipated by the prior art.

The examiner is erroneous when states that Claim 1 is being anticipated by the prior art

*Synopsis: Claim 1 is not anticipated, rendered obvious, or suggested by Thackara (USPN 2766473), Newman (USPN 3745624), and Dezen (USPN 4467509) because the two end units in their designs are independently mounted on the shaft (axle, spindle) while in my design those two units are attached to each other via a mating connection.*

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The most notorious nuisance related to painting with a roller frame is paint leakage inside the roller frame cage. A removable end unit with a round face is used in several patents including Thackara (USPN 2766473), Newman (USPN 3745624), and Dezen (USPN 4467509) to retain the sleeve on the roller frame cage. This approach significantly reduces leakage by eliminating sleeve sliding that is the primary cause of leakage in conventional roller frames. However, these designs do not completely eliminate leakage of paint.

Claim 1 is introducing two end units and tells about ‘said bearing portion and said outer portion further comprising mating connection means and, for painting, forming a mating connection between said portions having characteristics that ensure fast and tight trapping of the core and that prevent weakening of the sleeve squeezing while painting’ (Claim 1, lines 17 – 20). Such design explains the prime advantage of my invention: its ability to establish firm and permanent squeeze of the roller sleeve by two end units with round faces. No existing patent is capable to provide such squeeze. I will show this for the three patents the examiner mentioned in the final rejection.

*Note: Sealing of the interior of the roller sleeve core is further facilitated with the help of two washes urged to both edges of the core (Claim 2) and a washer on the shaft (Claim 3). However, Claim 1 is providing a strong squeeze needed for Claims 2 and 3 to work. Without such squeeze the washes would not work well and leakage could be just reduced, but not eliminated.*

Thackara (USPN 2766473), Newman (USPN 3745624), and Dezen (USPN 4467509) are not capable to achieve such squeeze because the two end units in their designs are independently mounted on the shaft (axle, spindle). This is clear from the patent drawings and is explicitly stated in all three patents:

- Thackara – ‘A hub portion 23 of the cap 16 is rotatably mounted on the axle 13’ (Page 2, Lines 26 – 27) and ‘A hub portion 30 of the cap 25 is rotatably mounted on the axle 13’ (Page 2, Lines 44 – 45). So, the end units 16 and 25 are independently mounted on the axle 13
- Newman – ‘a pair of independent frame units rotatable on a spindle of the paint roller’ (ABSTRACT, Lines 1 – 3)
- Dezen – ‘an outer end member rotatably located on said shaft adjacent an outer end’ (Page 6, Lines 59 – 60).

It is apparent that under such conditions a strong permanent squeeze of the roller sleeve is either impossible, or would obstruct rotation of the roller cage.

Indeed, in Newman’s design the initial squeeze, if applied by a painter, would entirely rely on friction between the inner surface of the core and the rods 30 and 50 (USPN 3745624, Page 1). This definitely is not sufficient to retain a squeeze during painting.

For Thackara’s and Dezen’s designs the shaft is a ‘participant’ in the squeeze. As a result, when a roller sleeve is squeezed, rotation friction will be significantly increased and will make rotation of the roller cage obstructed or even impossible due to action-reaction forces involved in the urge transfer. In Thackara’s case, this is friction between the spring clamp 37 and the hub portion 30 of the cap 25 (USPN 2766473, Fig. 2). In Dezen’s case, this is friction between the outer sleeve 64 and the flange 78 (USPN 4467509, Fig. 3).

The basic idea of my invention is to connect the end units that squeeze the roller sleeve without any participation from the shaft or the sleeve to avoid the problems explained above. The most practical way is a direct connection of the end units. One method, for example, could be to screw the removable end unit up to the permanently mounted unit. Another method could to use a bayonet connection. Using a screw (‘an intermediate member’) to connect the end units is also a possible, however rather impractical implementation of a connection for squeezing the roller sleeve.

The best way to understand the difference between how the two end units are connected in my invention and in Thackara’s, Newman’s, and Dezen’s inventions is to perform an easy mental experiment: imagine that you remove both end units (Fig. 3, 110 and 150) from the shaft and connect them without the sleeve. For my design the end units when removed from the shaft and without a sleeve can be connected the same way as they are connected in the presence of the shaft and the sleeve. For Thackara’s, Newman’s, and Dezen’s claims this is just impossible. This experiment could be considered as a litmus test for a kind of connection that I used in my design, so called ‘mating connection’. No existing patent with a removable end cap would pass it.

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In view of the above consideration it is obvious that my Claim 1 is not anticipated, rendered obvious, or suggested by Thackara (USPN 2766473), Newman (USPN 3745624), and Dezen (USPN 4467509).

The examiner is erroneous when states that the end units in Thackara's, Newman's, and Dezen's patents form mating connections

*Synopsis: "Mating connection" is an established technical term used to describe a special kind of connection of two parts. The end units in Thackara's, Newman's, and Dezen's inventions do not form mating connections.*

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According to the examiner, Claim 1 is anticipated by Thackara (USPN 2766473), Newman (USPN 3745624), and Dezen (USPN 4467509) because end units in these claims also form 'mating connections' and therefore Claim 1 does not reject anticipation of the prior art. This is incorrect.

The appellant selected the term 'mating connection' when looking for the best wording for Claim 1 to explain what kind of connection fastens together the end units in my invention. One approach could be to list various possible implementations. However, a better way could be to utilize a technical term used in similar situations that would cover all possible permutations. Fortunately, there is a proper term, 'mating connection', and I decided to use it. Before utilizing the term I researched the Database of Patents and found that since 1976 'mating connection' was used in 249 claims (USPN 6733313, 6722922, 6511102, and others). They always describe two connected parts of an assembly (device, etc.) that would pass the 'litmus test' mentioned above. I believe that it is legitimate to rely on the established technical term and expect that any person skilled in the art would understand and interpret it the same way as it was utilized in previously registered patents.

According to my Claim 1 'said bearing portion and said outer portion further comprising mating connection means and, for painting, forming a **mating connection**' (Claim 1, lines 17 – 18). These wording adequately represents the basic idea of the invention and clearly separates my claim from the three mentioned patents. These wording explicitly tells that the end units (Fig. 3, 110 and 150) form a mating connection via the mating means they comprise. This wording clearly excludes any other parts, including the shaft and the sleeve, as participants in this connection.

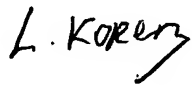
At the same time, Thackara's, Newman's, and Dezen's patents state the opposite (also explicitly): their end units are independently mounted on the shaft. Without a shaft and a sleeve they would be completely disconnected for all three patents.

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In view of the above considerations no person skilled in the art would conclude that in Thackara's (USPN 2766473), Newman's (USPN 3745624), and Dezen's (USPN 4467509) patents corresponding end units form mating connections.

Please call 847-809-8762 or 630-706-4553 to reach me with any questions you may have.

Sincerely,

A handwritten signature in black ink, appearing to read "L. Korenevsky". The signature is stylized with a large, sweeping "L" and a long, horizontal stroke extending to the right.

Lev Korenevsky  
05/16/2005

## APPENDIX (CLAIMS)

Claim 1: A paint roller frame comprising a shaft having a handle portion fixedly secured to a handle and a roller cage assembly mounted on the opposite end of said shaft for supporting a paint roller sleeve thereon, wherein:

said roller cage assembly is generally perpendicular to said shaft's handle portion;

said roller cage assembly comprises a bearing portion and an outer portion which is removable to permit replacement of the roller sleeve;

said bearing portion is mounted on said shaft that is passing through an opening in the bearing portion;

said bearing portion has a supporting surface to support the paint roller sleeve and an annular (inner) face against which an adjacent (inner) end surface of the roller sleeve core can be urged to prevent the paint roller sleeve from axial sliding and to inhibit paint flow into the interior of the core;

said outer portion having a supporting surface to support the paint roller sleeve and an annular (outer) face against which an adjacent (outer) end surface of the roller sleeve core can be urged to prevent the paint roller sleeve from axial sliding and to inhibit paint flow into the core interior;

said bearing portion and said outer portion further comprising mating connection means and, for painting, forming a mating connection between said portions having characteristics that ensure fast and tight trapping of the core and that prevent weakening of the sleeve squeezing while painting.

Claim: 2: A paint roller frame as claimed in claim 1 further comprising two resilient washers adjacent to said inner and outer annular faces to significantly improve sealing of the core's interior and to create a strain that prevents unscrewing of the outer portion and, therefore, further ensures secure sleeve squeezing during painting.

Claim: 3: A paint roller frame as claimed in claim 1 where said bearing portion further comprises a washer to prevent leaks inside the roller cage assembly along the shaft through said opening in the bearing portion.

Claim: 4: A paint roller frame as claimed in claim 1 where the length of said roller cage assembly is adjustable by repositioning of the roller cage parts allowing usage of the same roller frame with roller sleeves of different lengths.

Claim: 6: A paint roller frame as claimed in claim 1 wherein said roller cage can be removed from the shaft, disassembled for maintenance or replacement of worn parts, assembled again, and mounted on the shaft with the help of conventional tools.

Claim: 7: A paint roller frame as claimed in claim 1 further comprising a clip-on end wig that can be mounted on the cylinder surface of said annular face of the outer end assembly comprising of a cap and a painting portion attached to the cap; said painting portion made of a material similar to the covering of the paint roller sleeve.



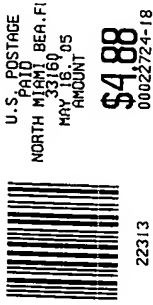
Claim 8: A paint roller frame as claimed in claim 1 with a conventional U-shaped shaft also comprising a hook located near the end of the shaft's handle portion that is close to the paint roller sleeve; such a position of the hook allows the roller frame to be mounted higher on a grid (a paint rack) fastened in a paint bucket; the hook that is located this way keeps the roller sleeve resting above the paint in the highest possible position to let more paint be pored in the paint bucket without the paint roller sleeve soaking the paint.

Claim 9: A paint roller frame as claimed in claim 1 with a conventional U-shaped shaft also comprising a plastic sheathing for the portion of the metallic shaft of the paint roller frame adjacent to the paint roller cage assembly to eliminate dark marks on walls as a result of occasional touching walls by said portion of the shaft during painting.

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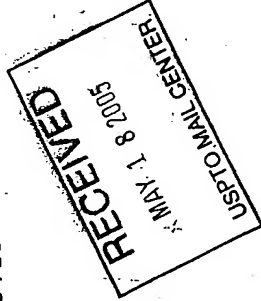


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